

What is claimed is:

1. An optical communication assembly, comprising:
an optical signal collimator configured to emit an optical signal based on an
5 input communication signal;
a dispersive device configured to receive the optical signal and to disperse
multiple wavelength channels of the optical signal in a dispersive direction ;
a first light-directing device configured to focus the multiple wavelength
channels in a non-dispersive direction for projection onto a light modulating device; and
10 a second light-directing device configured to focus the multiple wavelength
channels in the dispersive direction for projection onto the light modulating device.
2. An optical communication assembly according to claim 1, wherein the optical
communication assembly is a dynamic gain equalizer and the light modulating device
15 includes a MEMS mirror array.
3. An optical communication assembly according to claim 1, wherein the multiple
wavelength channels range from about 1528nm to about 1610nm.
- 20 4. An optical communication assembly according to claim 1, wherein the first and
second light-directing devices are first and second refractive devices.

5. An optical communication assembly according to claim 4, wherein the first refractive device is a first lens comprising a cylindrical convex curvature in the non-dispersive direction, and the second refractive device is a second lens comprising a cylindrical convex curvature in the dispersive direction.

6. An optical communication assembly according to claim 5, wherein the first lens is positioned between the optical signal collimator and the second lens.

7. An optical communication assembly according to claim 6, wherein the second lens is positioned at a focal length of the first lens.

8. An optical communication assembly according to claim 1, wherein the first and second light-directing devices are first and second reflective devices.

9. An optical communication assembly according to claim 8, wherein the first reflective device is a first mirror comprising a cylindrical convex curvature in the non-dispersive direction, and the second reflective device is a second mirror comprising a cylindrical convex curvature in the dispersive direction.

10. An optical communication assembly according to claim 9, wherein the second mirror is positioned at a focal length of the first mirror.

11. An optical communication assembly according to claim 1, wherein the first light-directing device comprises an optical wavelength grating.

5 12. An optical communication assembly according to claim 1, wherein the non-dispersive direction is substantially perpendicular to the dispersive direction.

13. An optical communication assembly according to claim 1, wherein the first light-directing is further configured to diverge the multiple wavelength channels in the
10 non-dispersive direction, and the second light-directing device is configured to converge the multiple wavelength channels in the dispersive direction.

14. A method of modulating an optical signal, comprising:
emitting an optical signal comprising multiple wavelength channels;
15 dispersing the multiple wavelength channels in a dispersive direction;
focusing the multiple wavelength channels in a non-dispersive direction for projection onto a light modulating device; and
focusing the multiple wavelength channels in the dispersive direction for projection onto the light modulating device.

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15. A method according to claim 14, wherein the method of modulating an optical signal comprises a method of modulating an optical signal within a dynamic gain equalizer for projection onto a MEMS mirror array within the light modulating device.
- 5 16. A method according to claim 14, wherein dispersing the multiple wavelength channels along a dispersive axis further comprises dispersing multiple wavelength channels having a range of about 1528nm to about 1610nm.
- 10 17. A method according to claim 14, wherein focusing the multiple wavelength channels in non-dispersive and dispersive directions comprises focusing the multiple wavelength channels in non-dispersive and dispersive directions using respective first and second refracting devices.
- 15 18. A method according to claim 17, wherein the first refractive device is a first lens comprising a cylindrical convex curvature in the non-dispersive direction, and the second refractive device is a second lens comprising a cylindrical convex curvature in the dispersive direction.
- 20 19. A method according to claim 18, further comprising positioning the first lens between the second lens and an optical signal collimator emitting the optical signal.

20. A method according to claim 19, further comprising positioning the second lens at a focal length of the first lens.

21. A method according to claim 14, wherein focusing the multiple wavelength channels in non-dispersive and dispersive directions comprises focusing the multiple wavelength channels in non-dispersive and dispersive directions using respective first and second reflective devices.

22. A method according to claim 21, wherein the first reflective device is a first mirror comprising a cylindrical convex curvature in the non-dispersive direction, and the second reflective device is a second mirror comprising a cylindrical convex curvature in the dispersive direction.

23. A method according to claim 22, further comprising positioning the first mirror between the second mirror and an optical signal collimator emitting the optical signal.

24. A method according to claim 23, further comprising positioning the second mirror at a focal length of the first mirror.

25. A method according to claim 14, wherein dispersing the multiple wavelength channels in a dispersive direction comprises dispersing the multiple wavelength channels in a dispersive direction using an optical wavelength grating.

26. A method according to claim 14, wherein the non-dispersive direction is substantially perpendicular to the dispersive direction.

5 27. A method according to claim 14, wherein focusing further comprises converging the multiple wavelength channels in the dispersive direction, and diverging the multiple wavelength channels in the non-dispersive direction.